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Unemployment, Migration, and Wages in Turkey 1962-85

Bent Hansen

Long-term voluntary unemployment of a more fully educated youth population is as much a factor in the long-term upward trend in unemployment in Turkey as involuntary unemployment because of stabilization.

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Working with poor, incomplete data on Turkey's labor market, Hansen analyzed the status and development of Turkey's labor market since 1962. He concludes that:

The estimated steady upward trend in unemployment since 1962 (to 12.7 percent in 1985) may be misleading. Cyclical short-term changes have been important, unemployment was probably declining in the early 1970s and again after 1982, and unemployment increased most between 1978 and 1982, with the stabilization program. At the same time, young, educated single people with relatively little work experience and long spells of unemployment dominated the unemployment picture. So long-term unemployment of youth was as much a factor as unemployment because of stabilization.

Rural-urban migration was substantial between 1965 and 1975 but, remarkably enough, was reversed between 1975 and 1980 — proba-

bly as a result of the recession accompanying the stabilization policy of 1978. This helps to explain why rural unemployment which was lower than urban unemployment in 1973-74, but has increased much more than urban unemployment since then.

Hansen concludes that, all things considered, the long upward trend in unemployment in Turkey is partly a matter of the voluntary unemployment of a better-educated population of youth, and partly a matter of involuntary unemployment related to the stabilization program.

Although the data are extremely unreliable, Hansen believes that wages in manufacturing and mining for 1962-85 have been determined less by market forces than by increasingly militant unions, government intervention, and the establishment of an incomes policy, including minimum wages.

This paper is a product of the Political Economy of Poverty, Equity, and Growth study. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Celina Bermudez, room 14-006, extension 39248 (74 pages with tables).

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Content

	page
Introduction	iii
1. Unemployment, 1962-85	1
Notes to Section 1	21
Tables 1.1 - 1.9	22
2. Internal and External Migration	32
Tables 2.1 - 2.4	36
3. Nominal Wage Rates - Areas of Knowledge and Ignorance .	39
Notes to Section 3	54
Tables 3.1 - 3.7	56
4. Phillips Relation for Turkey	63
Notes to Section 4	70
Tables 4.1 - 4.3	72

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Introduction

Turkey has during the last decade gone through an extremely interesting process of policy transformation from an inward looking import substitution strategy with etatism the basic economic ideology to an outward looking strategy of export led growth with some institutional change in the direction of privatisation. After an IMF-IBRD-OECD sponsored stabilization program in 1978, a broad reform program was initiated in 1980 and is still in progress. Developing countries may have much to learn from the Turkish experience of policy transformation, its positive and negative aspects.

Amongst the negative aspects is an apparent, strong and persistent increase in the rate of unemployment with a sharp decline in real product wages. If a fact, how and why has this happened? To answer these questions detailed labor market analysis is required. Unfortunately, statistics and other information about the Turkish labor market are not up to satisfactory standards, less so, of course, the more we go back in time. Data problems are therefore a primary concern of this paper. Equally important we have the problem of how to model the Turkish labor market. Given the specific institutional and political environment and its development, it is by no means obvious that standard models should apply easily and without qualifications. Competitive equilibrium models with market clearing on the one hand and disequilibrium models with Phillips type dynamics on the other hand are natural candidates. Given the institutional-political setting, however, market-power oriented modelling should not be ruled out. These are the kind of questions we are addressing, natural for research work growing out of a larger project on "The Political Economy of Poverty, Equity and Growth". Given the poor data no definitive answers should be expected. No definitive answers will be given but there are indications that market clearing may be the appropriate model for agricultural markets for unskilled (uneducated) labor and that, for the period in question and for other parts of the labor market, market-power oriented modelling may be more appropriate. These conclusions, however, are little more than conjectures.

1: Unemployment, 1962-85 .

The official estimates of national unemployment, numbers and rates for the years 1962-86, prepared by the SPO (State Planning Organization) and presented in Table 1.4 and Graph 1.1 give rise to serious questions. As reported to the World Bank, the SPO operates with the notion of "total civilian employment" to which is added "urban and rural unemployment excluding agricultural labor surplus" to arrive at the "domestic civilian labor force". Adding to the "urban and rural unemployment excluding agricultural labor surplus" something called "agricultural labor surplus at peak season", so-called "domestic labor surplus" obtains. Adding further "labor stock abroad", the "total labor surplus" is finally arrived at. Adding "labor stock abroad" to "domestic civilian labor force", the "total civilian labor force" obtains. Measuring "urban and rural unemployment excluding agricultural labor surplus" on "domestic civilian labor force" an unemployment rate of 12.8 percent is found for 1984. Measuring the "domestic labor surplus" on the "domestic civilian labor force" a rate of 16.5 percent is found for the same year. Measuring, finally, "total labor surplus" on "total civilian labor force" a rate of 21.0 percent obtains. It is this conceptual proliferation that

gives rise to the confusing reporting of unemployment rates for Turkey ranging (for 1984) from 13 to 21 percent.

We obviously have to make up our minds here about what we are asking for and that presumably must mean that we have to specify an analytical point-of-view. It is important to notice that the SPO distinguishes between "unemployment" and "labor surplus". The notion of unemployment points in the direction of labor market analysis in terms of demand and supply where a crucial problem is to measure the degree of market clearing, so-called involuntary unemployment and its role in wage formation, in a Phillips relation, say, and the standard statistic here is that of labor "not employed and seeking employment at going market wage", typically obtained through special labor force surveys. The notion of labor surplus points in the direction of development theoretical analysis of potential production at full employment, defined either as a target or as labor supply under certain ideal (target) conditions. The problem is whether we are aiming at descriptive, analytical-empirical or prescriptive, normative analysis. While the SPO estimates of "agricultural labor surplus at peak season" presumably are of the normative type it is not clear how the SPO defines and estimates urban and rural unemployment.¹

I shall here concentrate upon the unemployment estimates. Although apparently now anchored upon the single national labor force survey of 1985 (Table 1.3), they may for other years be

related to the regular quinquennial population censuses.² The SPO estimates for 1965, 1975, and 1980, however, greatly exceed both level and increase of the explicit counts of unemployed, seeking employment, made by the censuses for these years and shown in Table 1.2 (compare with Graph 1.1). The censuses have an increase from 0.4 percent in 1965 to 3.6 percent in 1980 while the corresponding SPO estimates (chained) are 3.6 and 10.7 percent, respectively. The SPO estimates may perhaps also have considered the counts of economically active population with occupation "not adequately described and unknown" which increased from 5.1 percent in 1960 to 6.4 percent in 1965 and 10.9 percent in 1970 (age 15 and above) and those for "not adequately defined" which increased from 2.0 percent in 1970 to 4.1 percent in 1975 (age 12 and above). Be that as it may, it is generally acknowledged that population censuses are a poor source of information about unemployment and we should test the SPO estimates of unemployment against all other sources of information available. Other such sources are the special labor force surveys for urban areas, conducted for the years 1967-69 and 1982-85 and for rural areas 1973-74, with data for applications and placements, 1965-86, and for registered unemployed and new vacancies, 1962-86, all from the public labor placement offices. These series are presented in Graph I.1 and/or Tables 1.1, 3 and 4. The labor force surveys (1985, pp.vi-viii) are patterned upon the United States model. Assuming sampling and

inflation to be in order, comparability is a problem. We shall later return to the question of the applicability of the U.S. model in the Turkish context.

The starting point must be the only national survey, published so conducted in 1985. Like the urban places surveys it was conducted in October–November which is a slack season in agriculture. Unemployed are divided into "active" and "inactive" unemployed, the latter apparently so-called discouraged workers (ibid.p.ix). I have included the "inactive" unemployed and operate also with a wider concept of unemployed, including in addition "unemployed not seeking employment" and "seasonal workers not seeking a job". Information about such unemployed has been collected by all the Turkish LFSs. It is not clear how unemployed not seeking employment is defined. Indeed, strictly speaking this is nothing but the definition of labor not in the labor force. We may also here be encountering something corresponding to "discouraged workers". It may make sense to include both this category and seasonal workers not employed at the time of the survey even though they do not seek work just now. The measured national unemployment rates for 1985 / ^{become} then 12.3 and 12.7 percent, (see Table 1.3) respectively. Comparing with the measured unemployment rates for urban places (see below) for 1985 we find, computing the difference between national and urban LFSs, implicit unemployment rates for rural areas of 10.3 and 10.7 percent, respectively, a surprisingly high rural unemployment rate, even considering the

season. The national rate of 12.7 percent is the same as the rate reported to the OECD by the SPO for 1985 (Table 1.4). . For earlier years there are no national LFSs but only special surveys for urban and rural areas as mentioned above.

For urban areas the LFSs for the years 1982-85 should be fully comparable. The coverage is limited to cities with more than 10,000 inhabitants (tabulations for cities with more than 20,000 inhabitants exist, ibid. pp. 75-88); in 1980 the total population in such cities actually exceeded slightly that in urban areas defined as provincial and district centers. 1968 and 1969 should also be mutually comparable, apparently covering all conglomerations. 1967, finally, covered only cities with 50,000 inhabitants and above with a population about 55 percent of that of urban areas in the just mentioned sense. Assuming unemployment to increase with city size, not a self-evident assumption, 1967 might be upward biased as compared with 1982-85 which in turn might be upward biased as compared with 1968-69 which in so far as size is concerned should be unbiased. For 1967-69 the source refers to November as the time of the surveys. For 1982-85, October-November appear to be the time of the surveys. We have finally the problem that 1967-69 cover persons age 15 and above, 1982-85 persons age 12 and above. High youth unemployment could create an upward bias for 1982-85 as compared with 1967-69. What these possible biases add up to is hard to say. Assuming the biases not to be seriously distorting, and disregarding the

seasonality problems the conclusion would be that urban unemployment may have increased from a level of about 3 percent in 1967-69 to 11-15 percent in 1982-85 with a tendency to increase within both of these periods.

For rural areas explicit labor force surveys have only been conducted for 1973-74 and seasonality is a major problem. These surveys were conducted in June, October, and April, in this order, and thus do not cover the winter season where there may be little field work in agriculture and construction work may be down in parts of the country but, on the other hand, farm families may not be looking for employment outside the own farm and in any case unemployment is not easy to either define or measure.

A detailed study by FAO and Turkish authorities gives a picture of agricultural seasonalities in the aggregate. The study is clearly of the "normative" type, "combining labor requirements for each major agricultural operation under different methods (power sources) of production to estimate labor force demand and supply in agriculture" and gave the results shown in Table 1.5. "Peak season surplus" is apparently something conceptually different from "seasonally removable labor surplus", the former estimated to be 990,000 in 1967 and 113,000 in 1972, the latter zero in both years. The peak season surplus for 1967 is identical with that appearing for 1967 in the SPO estimates of national labor force and employment for the period 1962-72. For 1972, however,

the latter differs from the figure in Table 1.5, 850,000 against 113,000. 1967 apparently has by the SPO been used as a bench-mark year after which a slow downward trend is assumed, bringing the number down to 665,000 in 1984.

More interesting from our point-of-view is, however, that the slack seasons appear to be March-June and September-November, December-February being relatively busy (soil preparation for the winter wheat?) with July-August the peak (harvest). If that really is the case, an average of unemployed seeking jobs in June, October and April might overestimate annual average unemployment in rural areas.

If now the rural or, at least, the agricultural labor market in Turkey, as experience from other LDCs gives us some reason for believing clears almost instantaneously, certainly at the peak season and possibly at any time during the year, rural wages being sufficiently flexible, there should be no rural unemployed seeking work at any time or, more realistically, the number should at any time be small. People employed in rural areas or not being in the rural labor force might still be seeking employment in urban areas or abroad if they planned to migrate but such questions are not asked by the surveys which in this regard are deficient as is the United States model. Rural unemployment according to the labor force surveys of 1973-74 amounted to 0.2 - 0.7 percent of the rural labor force in June, October and April. This is consistent with the assumption of

market clearing and suggests that at the peak season in agriculture there was at that time practically speaking no unemployment in this sense, but, of course, does not exclude surplus labor in the normative sense even at the peak season. Granted market clearing around the year we should expect the same result from eventual winter surveys. Indeed, winter surveys might disclose zero unemployment accompanied by huge surplus labor. Market clearing requires highly flexible nominal and real (product) wages and we should expect wages to be relatively low during the slack winter months. There is little information about rural wages in Turkey. The little we have is from the SII, Social Insurance Institute, seasonalities are averaged out, it covers only a few recent years, and it applies only to a few insured workers in agriculture who most certainly are not representative of landless farm hands.

Let us return now to the LFS for 1985 and the implicit unemployment estimate for rural areas, computed by me as the difference between national and urban (10,000 and above) LFS for that year. Table VI.Ap.1.6 shows the breakdown by urban and rural areas and by completed education. The latter breakdown with a distribution of registered unemployed by age groups for 1979-86 (shown in Table 1.8) and distributions by age, marital status, work experience and length of unemployment in 1985 (I), Table 1.9 help us somewhat to come to grips with the nature of unemployment in Turkey.

As already mentioned the implicit unemployment rate for

rural areas in 1985 appears remarkably high. The reason may be that non-agricultural, rural activities are included. Moreover, the national as well as urban LFS were taken in a slack agricultural season with possible implications for measured unemployment.

From Tables 1.6-9 it is immediately seen that in 1985 the unemployed typically were educated, young singles with relatively little work experience and being long-term unemployed. The composition of the unemployed with a predominance of young educated singles, possibly living at home, explains why the welfare implications of the increase in unemployment may be minor despite the absence of unemployment insurance, while the social stability aspects may be so much more serious.

One of the most striking differences between rural and urban unemployment is the low unemployment rate of 5.8 percent for labor without formal education in rural areas and the much higher rate of 19.8 percent for such labor in urban areas. This could be the combined result of rural-urban migration with a high degree of wage flexibility for agricultural work which may not generally attract educated labor, except for specialized work. Table 1.8 thus does not seem to exclude the possibility of approximate clearing of the rural labor market for uneducated labor, provided that the rural labor market is sufficiently segmented to make this distinction meaningful. Labor with primary education has about average unemployment rates in both urban and

rural areas. High school and vocationally educated have considerably higher unemployment rates in rural than in urban areas. It is the educated labor that contributes the bulk of unemployed both in urban and rural areas, 87 percent in urban and 84 percent in rural areas. This is, of course, partly because educated labor now is the bulk of the labor force, 90 percent in urban and 71 percent in rural areas. Yet, even in rural areas with 29 percent of the labor force uneducated, these supply only 16 percent of the unemployed and at the national level the picture is much the same, the uneducated representing 21 percent of the labor force but only 14 percent of the unemployed. The general conclusion would seem to be that the labor markets for uneducated clear better than those for educated which again would mean that wages for uneducated labor are more flexible than those for educated labor.

These findings immediately raise the question whether new entrants to the labor market, school leavers in particular, dominate amongst the unemployed so that we should expect relatively high unemployment rates simply because the educated population increases relatively fast. Of the Turkish LFSs two provides breakdown of unemployed by work experience. Of the unemployed seeking job 1969, 71 percent had had a job before, 29 percent were seeking job for the first time. For 1985 these figures were 64 and 36. Age distributions of unemployed registered at the placement offices are available back to 1979.

As Table 1.8 shows the share of the age group 14-19 is not particularly high and did tend to decline from about 18 percent in 1979 to 13 percent in 1986 when unemployment according to all indicators increased strongly. The age group 14-24 remained approximately constant during this period at 55 percent. For the United States corresponding percentages declined from 25.3 percent in 1979 to 17.6 percent in 1984 (age 16-19) and from 48.8 percent in 1979 to 39.1 percent in 1984 (age 16-24). Considering the fact that U.S.-youngsters to a much larger extent go to college and thus enter the labor market several years later than their Turkish counterparts, it would appear that new entrants from the educational system play a less important role in Turkey than in the United States. This does not mean, of course, that it may not be an important factor in Turkey; it might be argued that school leavers may not register and search for jobs through the placement offices and thus do not appear in the statistics. Of 654,000 unemployed seeking employment in 1982, only 32 percent relied upon the placement offices (Statistical Yearbook of Turkey, 1985, Table 152) while for unemployed with completed primary school education this percent was 29 percent and for those with completed high school education it was 39 percent. Breakdowns of the LFSs for 1985 by age and education support the new entrants hypothesis.

In understanding, finally, the high measured rural unemployment rate in 1985 we have to point to the possibility

that the standard questions of the American LFS-model may not be appropriately specified for rural Turkey during slack seasons in agriculture. When the leading question: are you employed, is answered in the negative, the follow-up question: are you seeking employment, may not be adequately specified as to both wage level at which and locality in which employment is sought. Even assuming that employment is sought at "going market wage rate", and already here the problems are legion, employment may be sought in rural areas (without migration or commuting) or in urban areas (with migration or commuting) or even abroad (with emigration). Going agricultural market wages during the slack season may be so low that even uneducated, unskilled labor might not be interested in such agricultural employment, yet be seeking urban or foreign employment at more attractive remuneration, everything considered. Considering the undifferentiated questioning it is quite possible that agricultural labor markets may clear during the agricultural slack with the rural LFS recording large numbers of non-employed seeking employment - outside agriculture or rural areas. Adequate questioning should first ask the rural non-employed: are you seeking work here at going market wages here? After an affirmative answer the person would be counted as rural (and, of course, national) unemployed in the rural (and national) labor force. If the answer were negative, the person would be counted as not in either the rural or the national labor force. The person should then be asked: are

you seeking work elsewhere (in urban areas) at going wages there?

If the answer were affirmative the person would be counted as national unemployed in the national, but not in the rural labor force. For rural and urban unemployed (labor force) to add up to national unemployed (labor force) we would then have to include rural residents not employed, not seeking rural employment but seeking urban employment, in the category of urban unemployed (urban labor force). From a demand-supply analytical point-of-view this would make sense since such persons would exert pressure on urban but not on rural wages.

Whether this interpretation of the Turkish LFS of 1985 holds water can only be settled through careful investigation into the questioning procedures applied by the LFSs. If corroborated, the interpretation makes the results of the 1985 LFSs compatible with the assumption of market clearing in rural labor markets and justifies the use of the national rate of unemployment in a Phillips relation for urban wage rates.

For years before 1985 direct information about rural unemployment is nonexistent . apart from the 1973-74 surveys. One way of approaching the problem is to accept both urban labor force surveys and SPO estimates at face value, assuming that both talk about unemployment in the same sense and from them compute the implicit rural unemployment for the periods 1967-69 and 1982-85 when only urban LFSs were conducted and the implicit urban unemployment for 1973-74 when only rural LFSs were conducted. Since possibly the SPO notion of unemployment is wider than that of unemployed seeking employment, I have in Tables VI.Ap.1.1 and 2 computed adjusted unemployment rates on a wider definition, including some unemployed not seeking employment. Information about such unemployment has been collected by all the Turkish LFSs.³ As already argued, it makes sense to count both categories as unemployed in the labor force and if rural LFSs were to be conducted for the winter season the latter category might take on some real importance although landless rural labor seems to be a relatively small group in Turkey. As it is, the adjusted unemployment rates of the LFSs are not spectacularly higher than the unadjusted ones. Taking into account the coverage of the LFSs as measured by population, we find on this basis an implicit urban unemployment rate of 10.5 percent for 1973-74 and implicit rural unemployment rates of 5.3 percent for 1967-69 and 10.7 percent for 1982-85, average. The implicit urban rate for 1973-74 is simply not credible. The implicit rural rates are too

high compared with the actual rates measured by the urban LFSs, especially for 1967-69.

The SPO estimates for years earlier than 1985 thus do not appear easy to reconcile with the LFSs. One way of approaching the problem of the national unemployment rates for years before 1985 would be to accept the national LFS for 1985 with the urban LFSs for 1982-85 and 1967-69 at face value and assume that the ratio between national and urban unemployment rates in the wide sense for all years were the same as in 1985. With this assumption we would actually tend to overestimate national unemployment rates the further we go back in time, assuming the rural rate to be proportionately lower than than the urban one, because the urban labor force has increased relatively over time. This leads to the following conjectures for the national rate as compared with the SPO estimates:

National unemployment rates				
	conjectured		SPO estimates	
	pct	index	pct	index
1985	12.7	389	12.7	259
1984	12.0		12.4	
1983	12.0	353	12.4	249
1982	10.6		11.8	

1969	4.1		5.2	
1968	2.9	100	4.9	100
1967	2.8		4.6	

SPO estimates chained in 1972.

Judging from these conjectures, the (chained) SPO estimates overestimate the national rate of unemployment by some $\frac{1}{2}$ -1 percentage point in the early 1980s and by some 1-2 percentage point in the late 1960s with the result that the increase in unemployment may be underestimated considerably, the estimated increase from 1967-69 to 1982-85 being about 149 percent as compared with the conjectured increase of 253 percent, at the least.⁴

Comparison with the population census data for 1965, 1975 and 1980, as already explained, indicates overestimate of both level and increase of the unemployment rate. Although population census and LFS data are not directly comparable there is something to indicate that SPO overestimates the increase of unemployment during the 1960s and thereafter underestimates the increase. This impression is corroborated by the placement office statistics to which we now turn.

The remaining labor market indicators are placement office data for applications and placements (apparently flow data), registered unemployed (stock data) and new vacancies (flow data). Labor placement data are always difficult to interpret because

trends in geographical coverage and use by labor and enterprises may lead to changes in data at unchanged labor market conditions. It is not clear from the source either whether applications and placement data include emigrants. For applications and placements I have tried to sidestep coverage and use problems by computing two auxiliary series, one resembling the unemployment rate, albeit computed on flow data, and defined as the difference between applications and placements over applications, the other one simply as the ratio between applications and placements. The two auxiliary series are closely related, of course, the former being nothing but one minus the inverse of the latter. The placement offices cover the whole country and, albeit located in cities and towns they do pick up some demand and supply from the surrounding countryside. The comparison is therefore naturally with the SPO estimates which show an increase by 152 percent from 1967-69 to 1982-85 while the auxiliary series show increases by 95 and 140 percent, the ratio series thus very close to the SPO estimates for this period. Even more interesting are the short term tendencies in both auxiliary series to decline, weakly, so from 1965 to 1973, strongly so after 1982. This contradicts the steady upward trend in the SPO series, prevailing also from 1965 to 1973. Considering the relatively high GDP growth in the economy during these years and the strong increase in emigration, slowing down during the early 1970s, it seems plausible that unemployment should indeed have been declining during these

years. The decline after 1982 is more puzzling in so far as the urban LFSs 1982-85 tended to show increased unemployment. Capacity utilization, on the other hand, also tended to improve. The SPO estimate, however, does at least indicate deceleration after 1980 and even decline in 1986. GDP growth did increase from 1985 and the auxiliary series may be leading indicators.

Finally we have the series for registered unemployed and new vacancies. These unfortunately cannot be combined into an excess demand indicator, the former being a stock, the latter a flow variable. Expressing both series as a percent of the domestic civilian labor force ^{so as} to normalize, the new vacancies rates are so small that they hardly lend themselves to economic analysis. For the record it can be mentioned that they declined from 0.3 percent in 1962-63 to 0.2 percent at which level they remained until 1978 when they declined further to 0.1 percent. They do thus indicate a downward trend in demand for labor. Registered unemployed were very few also until the mid-1970s whence they started increasing rapidly. Having stayed at a level of 0.2 percent from 1962 to 1969 the series increased to 0.3 percent through 1973 whence it steadily increased to reach 5.7 percent in 1986. This series may exaggerate the rate of increase because placement offices tend not to be fully informed about hiring of registered unemployed. Moreover, the strong increase during the 1980s may have been induced by government training programmes and the like that as a condition for participation

require registration as unemployed.

Conclusions: While the official unemployment estimates of the SPO undoubtedly are correct in claiming a strong increase in unemployment rates from the 1960s to the mid-1980s, it is not possible to substantiate the estimates in all detail. That LFSs have always been conducted at an agricultural slack season indicates that the level of unemployment as measured by the LFSs is exaggerated even assuming that the agricultural labor market always clear. We cannot know the degree of exaggeration but with agricultural markets clearing it may be a secondary matter. LFSs suggest that the national unemployment rate may have increased from some 3-4 percent at the end of the 1960s to 12.7 percent in 1985 as compared with the smaller increase from 5 to 12.7 percent estimated by the SPO. In agreement with the SPO estimates, placement office statistics suggest that most, if not all this increase took place from the mid-1970s to the early 1980s. Beyond that indicators are conflicting. Auxiliary placement indicators agree with the population censuses that unemployment rates may have increased slightly from 1965 to 1975 but suggest no increase during the second half of the 1960s and show a certain decline 1970-73 followed by considerable increase 1973-76. This is in disagreement with the SPO estimates which indicate steady increase from 1962 to 1985 apart from a slight drop in 1974 and 1977, yet appear plausible considering emigration. As for the development during the 1980s indicators are conflicting. Urban

LFSs show a tendency for unemployment rates to increase 1982-85 while the auxiliary placement office indicators suggest declining excess supply 1982-86, accelerating after 1984, as also weakly indicated by the SPO estimates. The series for registered unemployed shows strong increase of unemployment throughout the 1980s but is suspect due to incentives to register from new government programmes.

Everything considered I am inclined to believe that the strong upward trend in unemployment since the 1960s is a fact of life, qualified, however, by cyclical short term characteristics not apparent in the SPO estimates.

Our few indicators, LFSs, for rural unemployment suggest very low unemployment rates in 1973-74 and very high rates in 1985. Taken as they are in a slack agricultural season they may exaggerate rural unemployment. The 1973-74 LFSs clearly support the notion of labor market clearing in rural areas around the year. Insufficient differentiation of job-seeking activities of non-employed rural labor permits reconciliation of the high measured rural unemployment rates for 1985 with the assumption of continued market clearing around the year, assuming job seeking mainly directed towards urban areas (and foreign countries). This would in particular apply to educated labor which even in rural areas supplies the bulk of unemployed. As we shall see now in the following section a reversal of the rural-urban migration flow at the end of the 1970s may help explaining the relatively strong

increase in rural unemployment.

Notes to Section 1:

1. The OECD, Economic Surveys, Turkey, 1986-87, June 1987, Table 3, seems to believe that this is an estimate of actual seasonal unemployment which is certainly not the case.
2. SPO estimates of both labor force and its distribution by sectors differ substantially from census counts of economically active population and its distribution by activities.
3. The 1969 survey gives a detailed specification of the group "unemployed not seeking a job". Out of 56,580 persons, seasonal workers accounted for no less than 41,520, persons convinced that there are no jobs available in his area, 4,020, not needing to work, 2,820, found a job and will start to work, 1,320, temporary illness, 1,140, other, finally, 5,760.
4. An alternative method would be to follow Richard Stone's suggestion to correlate existing unemployment observations with observations for variables such as GDP and in this way infer values of unemployment for years without observations. I have not had the opportunity to apply this method, suggested to me by Dr. Mehran, ILO.

Tables to Section 1:

Table 1.1.

Turkey: Unemployment, Rural Areas, 1973-1974Labor Force Survey Data

Rural areas ^a , age 12 and above, last week						
	June 1973		October 1973		April 1974	
	000	pct	000	pct	000	pct
Employed ^b	8,937	99.6	9,042	99.8	8,979	99.9
Employed ^b	8,937	99.5	9,042	99.3	8,979	99.8
Unemployed ^c	32	0.4	21	0.2	8	0.1
Unemployed ^{cd}	47	0.5	65	0.7	16	0.2
Labor Force	8,969	100	9,063	100	8,987	100
Labor Force ^d	8,984	100	9,107	100	8,995	100

^a 401 rural settlements with less than 2,000 inhabitants

^b Including persons with a job but not at work, negligible

^c Seeking employment

^d Including unemployed not seeking employment

Source: Statistical Yearbook of Turkey, 1981, Table 150.

Table 1.2.

Turkey: Unemployment in Total/PopulationPopulation Census Data

	1965 ^a		1970		1975 ^b		1980 ^b	
	000	pct	000	pct	000	pct	000	pct
Employed	13,501	99.6			17,098	98.4	18,522	96.4
Unemployed ^c	56	0.4			285	1.6	690	3.6
Economically active	13,557	100			17,384	100	19,212	100

^a 15 years and above

^b 12 years and above

^c Seeking employment

Sources: 1965, Statistical Yearbook of Turkey, 1968, Table 140
1975, 80, ibid., 1985, Tables 43 and 44.

Economically
Active

Table 1.3.

Turkey: Unemployment, Urban Areas, 1967-1985Turkey, 1985
Labor Force Survey Data

	Urban ^a , November, age 15 and above						Urban places ^a , Oct.-Nov., age 12 and above								Turkey, as urban place	
	1967		1968		1969		1982		1983		1984		1985		1985	
	000	pct	000	pct	000	pct	000	pct	000	pct	000	pct	000	pct	000	pct
Employed ^b	1,819	97.2	3,572	97.1	3,369	96.7	5,328	89.1	6,075	87.9	6,317	88.1	6,912	85.2	16,163	87.7
Employed ^b	1,819	96.6	3,572	96.5	3,369	95.1	5,328	87.2	6,075	85.6	6,317	85.6	6,912	84.7	16,163	87.3
Unemployed ^c	52	2.8	106	2.9	115	3.3	654	10.9	833	12.1	855	11.9	1,203	14.8	2,260 ^e	12.3
Unemployed ^{cd}	64	3.4	128	3.5	172	4.9	781	12.8	1,021	14.4	1,062	14.4	1,250	15.3	2,355 ^e	12.7
Labor force	1,871	100	3,678	100	3,484	100	5,982	100	6,908	100	7,172	100	8,115	100	18,423	100
Labor force ^d	1,883	100	3,700	100	3,541	100	6,109	100	7,096	100	7,379	100	8,162	100	18,514	100

^a 1967: 32 cities with 50,000 inhabitants and above
 1968, 69: 32 cities with 50,000 inhabitants and above,
 25 " " 15,000 " " "
 49 " " less than 15,000 inhabitants,
 1 town " " 2,000 " "

^a 1982 to 1985: All cities with 10,000 inhabitants and above.

^b Including persons with a job but not at work, negligible.

^c Seeking employment.

^d Including unemployed not seeking employment.

^e Including "inactive unemployed", 1.0 percent of labor force.

Sources: Statistical Yearbook of Turkey, 1973, Tables 146, 150, 154.

ibid., 1987, Tables 137/ and 1985, Table 151.

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Sources: See attached.



Sources to Graph 1.1.

1. World Bank, February 1975, Stat. Appendix Table 1.2, 1962-72.
World Bank, 1982, Annex II, Table 1.2, 1972-80.
World Bank, int. information, 1977-84.
OECD, Economic Surveys, Turkey, 1987, Table 3, 1980-86.
- 2 and 3. Statistical Yearbook of Turkey, several issues
- 4 and 5. See Table 1.4.1.3.
6. OECD, Main Economic Indicators, According to Yearbook of Labor Statistics, ILO, 1987, this series shows registered unemployed at end of year at Placement Offices.

Table 1.4.

Turkey: Labor Market Indicators
1962-1986

	Unemployment*, as estimated by SPO and reported by					Placement Office Data			
	World Bank		OECD	World Bank chained to OECD	(Applications -placements)/ applications**	Applications/ Placements	Registered unemployed *	New vacancies*	
	Febr. 1975	1982							Internal Inform.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1962	1.93				2.2	n.a.	n.a.	0.15	0.29
1963	2.47				2.8	n.a.	n.a.	0.17	0.27
1964	2.80				3.2	n.a.	n.a.	0.19	0.23
1965	3.14				3.6	39.6	1.66	0.17	0.18
1966	3.56				4.1	39.7	1.66	0.19	0.17
1967	4.00				4.6	38.7	1.63	0.19	0.19
1968	4.27				4.9	36.4	1.57	0.25	0.23
1969	4.56				5.2	38.3	1.62	0.21	0.23
1970	4.60				5.3	40.4	1.68	0.32	0.21
1971	5.02				5.7	36.7	1.58	0.32	0.23
1972	5.27	6.11			6.0	33.7	1.51	0.31 0.29	0.25 0.24
1973		6.71			6.6	32.0	1.47	0.29	0.22
1974		6.53			6.4	38.5	1.63	0.53	0.23
1975		7.23			7.1	43.8	1.78	0.74	0.19
1976		7.83			7.7	54.7	2.21	0.89	0.22
1977		7.73	7.61		7.6	54.5	2.20	0.87	0.21
1978		8.36	8.11		8.1	64.3	2.80	..	0.16
1979		9.75	9.44		9.4	67.6	3.08	1.02	0.12
1980		10.75	10.74	10.7	10.7	67.7	3.09	1.52	0.09
1981			11.15	11.2	11.2	73.9	3.83	1.56	0.10
1982			11.78	11.8	11.8	76.4	4.23	2.46	0.09
1983			12.36	12.4	12.4	75.7	4.11	3.13	0.09
1984			12.79	12.4	12.4	74.0	3.84	4.22	
1985				12.7	12.7	69.2	3.25	5.12	
1986				12.0	12.0	55.3	2.24	5.70	
1987									

* percent of total domestic civilian labor force as estimated by SPO

** pro mille

Sources: See p.25

Table 1.5.

Turkey: Seasonal Labor Requirements and Supply
in Agriculture

(Adults of both sexes, 000)

	1967	1972
<hr/>		
Peak season (July-August):		
Labor supply	10.083	10,138
" demand	<u>9,173</u>	<u>10,025</u>
" surplus	<u>910</u>	<u>113</u>
Net seasonally removable labor surplus:		
Dec. - Febr.	619	959
March - May	3,824	4,463
June	4,744	5,016
July - August	0	0
Sept. - Nov.	<u>4,227</u>	<u>4,523</u>
Average, weighted	<u>2,563</u>	<u>2,904</u>
<hr/>		

Source: World Bank, Turkey, Febr. 1975, Tables 50 and 51, pp. 193-95) (refers to Duncan R. Miller, ed., Essays on Labor Force and Employment in Turkey). Average, weighted, my computation.

Table 1.6.

Turkey: Unemployment* by Urban and Rural Areas and Completed Education

(Labor Force Surveys, 1985, Age 12 and Above, Oct.-Nov.)

	Turkey			Urban			Rural**		
	unemployment rate, percent	percent of unemployed	percent of lab.force	unemployment rate, percent	percent of unemployed	percent of lab.force	unemployment rate, percent	percent of unemployed	percent of lab.force
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
No formal education	8.8	14.5	20.9	19.8	13.2	10.2	5.8	16.0	29.4
Primary	12.0	52.7	55.6	14.0	45.7	49.9	10.7	60.5	60.1
High school	22.5	24.4	13.8	20.3	28.6	21.6	27.7	19.6	7.6
Vocational	15.4	5.7	4.7	14.5	7.9	8.4	18.6	3.3	1.9
University, etc.	7.0	2.7	4.9	7.1	4.6	9.9	6.1	0.6	1.0
Total	12.7	100	100	15.3	100	100	10.7	100	100

* Both unemployed and economically active population including inactive unemployed, unemployed not seeking employment, and seasonal workers not seeking job.

** Computed as difference between national LFS 1985 and urban places LFS 1985.

Source: Statistical Yearbook of Turkey, 1987, Tables 137 and 146.

Table 1.7.

Turkey: Unemployment* by Urban and Rural Areas and Completed Education

(Labor Force Surveys, 1985, Age 12 and above, Oct.-Nov.,

Unpaid Family Members Not Included)

	Turkey			Urban			Rural**		
	Unemploym. rate percent	percent of unempl.	percent of lab.force	unemploym. rate percent	percent of unempl.	percent of lab.force	unemploym. rate percent	percent of unempl.	percent of lab.force
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
No formal education	16.6	14.5	15.4	21.6	13.2	9.8	13.5	16.0	23.3
Primary	17.0	52.7	54.6	14.8	45.7	49.7	19.6	60.5	61.4
High School	25.6	24.4	16.8	21.4	28.6	21.6	38.1	19.6	10.2
Vocational	16.0	5.7	6.4	14.8	7.9	8.6	20.4	3.3	3.2
University, etc	7.0	2.7	6.8	7.1	4.6	10.3	6.2	0.6	1.9
Total	17.7	100	100	16.1	100	100	19.8	100	100

* Both unemployed and economically active population (labor force) including inactive unemployed, unemployed not seeking employment, and seasonal workers not seeking job.

** Computed as difference between national LFS 1985 and urban places LFS 1985. Rural areas thus implicitly defined as all places outside cities with 10,000 inhabitants and more.

Source: Statistical Yearbook of Turkey, 1987, Tables 137 and 146 with 138 and 145.

Table 1.8.--

Turkey: Registered Unemployed by Age Groups*

(percents of total number)

Year	Age group	
	14-19	14-24
1986	13.2	55.1
1985	14.0	54.4
1984	14.7	55.0
1983	14.5	53.9
1982	14.9	54.5
1981	16.4	53.2
1980	19.1	55.3
1979	17.7	53.8

* At placement offices at end of year

Source: Yearbook of Labor Statistics, ILO.

Table 1.9.

Distribution of Unemployed by Age, Marital Status, Work Experience, and
Duration of Unemployment, 1985, percents

(Labor Force Survey, 1985, Age 12 and above, Oct.-Nov.)

		Total	Male	Female
Age, ≤ 24 years ^b	Turkey	62.9	53.3	71.6
	Urban ^a	60.1	55.4	69.2
	Rural	66.1	63.1	75.6
Marital status, singles ^b	Turkey	59.8	57.5	65.3
	Urban ^a	59.4	57.3	63.3
	Rural	60.3	57.7	68.5
Without work experience ^c	Turkey	64.0	54.4	86.7
Duration, 1 year and above ^c	Turkey	56.0	54.4	58.8

^a Cities with 10,000 inhabitants and more

^b Active and inactive unemployed

^c Only active unemployed

Source: 1985, Household Labour Force Survey, Results, (Turkey - 5 Region),
Prime Ministry, SIS, Tables 2A, 4, 36 and 40.

2: Internal and External Migration

Migration, both internal and external, is an important feature of the Turkish labor market. For understanding the development of unemployment it is necessary to come to grips with the development of migration.

i) Internal Migration. The main source of information is the population censuses. For 1970 a breakdown of the population by province of birth is available (Table 2.1). Of the total population 16.3 percent were born in provinces other than the province of residence. For males and females the figures were 18.5 and 13.9 percent, respectively, males apparently being more mobile than females. For the three big cities the figure for total population was 45.1 percent with 48.4 and 41.5 percent for males and females, respectively. For 1975 a breakdown of total population (with males and females separately) by change of place of residence (Table 2.2) revealed that 76.2 percent did not change place of residence during the five-year period 1970-75 with 23.8 percent apparently changing place of residence. A breakdown of the latter is, unfortunately, not complete. In any case, the 1970 and 1975 censuses thus indicate a high degree of mobility with migration from rural to urban areas predominating.

For 1980 we have a cross-tabulation of population, existing

in both 1975 and 1980 by residence in province centers, district centers, and village & sub-district centers in both years. From this information we can compute net migration between rural and urban areas, rural areas defined as villages & sub-district centers, urban areas as province and district centers. The result is shown in Table 2.3. Remarkably, there was a small negative rural-urban net-migration between 1975 and 1980, the population tending to move from urban to rural areas as defined here. This must be a consequence of the stabilization policy of 1978-79 with the following recession and strong increase in unemployment. The table discloses that for this period the overwhelming part of both urban and rural population remained stationary (within this breakdown) with only 3.6 percent of the rural 1975-population (existing both years) moving to urban areas with 3.2 percent of the rural 1980-population having moved from urban areas. The net was a slight movement of 83 thousand people or 0.2 percent of the total (existing both years) towards rural areas. The urban recession must have been deep and well understood by the population.

Similar official cross tabulations are not available (to me) for earlier periods. In Table 2.4 an attempt has been made to estimate a cross-tabulation for population that lived in both 1965 and 1975, distributed by residence in urban and rural areas in both years, urban areas here defined as cities with 10,000 inhabitants and more. The estimate is shaky, to put it mildly, and a brief explanation of methodology is in order. Population 10

years and above in 1975 was assumed also to have lived in 1965; the number was 29,267,000. This population was then distributed by rural areas, unorganized sector and organized sector in proportion to a similar distribution for 1963 estimated by Timur Kuran (op.cit., Table 11.1). Unorganized and organized sectors were aggregated to an urban sector. The distribution of the 1965-population, also existing in 1975, thus obtained, is presented in the right hand marginal column of Table 4. Kuran also guesstimated a (highly uncertain) population mobility matrix for the period 1963-73. On this basis the cross-tabulation for 1965-75 obtained. For 1965-75 we find in this way a net rural-urban migration of 3,906,000 or 13.3 percent of the population considered. This result clearly supports the idea of massive migration from rural to urban areas during the late 1960s and early 1970s.

In comparing the results for 1965-75 and 1975-80 it should be recalled that the shorter the period considered, the smaller, *ceteris paribus*, net-migration. Since, however, net-migration during 1975-80 was negative, it is obvious that a dramatic change in internal migration did take place between the two periods. The different definitions of urban and rural areas may also affect the results. Squatters (in gecekondus), an important element in rural-urban migration, may settle outside the municipal borders and thus not be enumerated as urban population but it is not obvious why this should affect cities with more than 10,000

inhabitants differently from provincial and district centers. Yet it adds to the uncertainty of the comparison.

It goes without saying that the reversal of internal net-migration from 1865-75 to 1975-80 must have seriously changed the employment situation, tending to increase unemployment in rural areas, relieving the situation in urban areas. The remarkable increase, both absolutely and relatively, in rural unemployment from 1973 to 1985, as reported by the official labor force surveys may be related to the reversal of internal net-migration.

ii) External Migration. Measured as a percent of the total labor force the stock of labor abroad increased from 0.1 percent in 1962 to 3.9 percent in 1972. From 1972 to 1977 it remained unchanged at 4.1 percent (new estimate) and increased then further to 5.3 percent in 1984. The net flow was thus almost half-a-percent annually of the labor force 1962-72, zero 1972-77, and thereafter less than 0.2 percent of the labor force annually. How the slowdown of external migration affected rural and urban areas is not well understood but probably the main direct impact was upon urban areas, partly, however, shifted backwards to rural areas. How the combined impact of external and internal migration has affected urban and rural unemployment and its distribution is hard to say.

Table 2.1.

Population, Residence and Birth Places1970

Provinces	Total population			Of which, born in other provinces					
	000s			000s			percents		
	Total	M	F	Total	M	F	Total	M	F
Turkey, total	35,605	18,007	17,598	5,789	3,338	2,451	16.3	18.5	13.9
Istanbul	3,019	1,625	1,394	1,670	954	716	55.3	58.7	51.4
Ankara	2,042	1,067	974	826	464	362	40.5	43.5	37.2
Izmir	1,427	739	688	431	242	189	30.2	32.7	27.5
Big cities	6,488	3,431	3,056	2,927	1,660	1,267	45.1	48.4	41.5

Source: Statistical Yearbook of Turkey, 1981, Table 28.

Table 2.2.

Population and Migrants, 1975

	Population 000s	1970-75 did not change residence percent	Migrants, percent						Total migrants
			Came to a province center from				Other and unknown		
			Another province center	District center in		A village in			
				Same province	Another province	Same province		Another province	
Total	40,197	76.2	3.3	0.5	0.6	0.5	0.4	4.8	10.0
Male	20,417	74.8	3.8	0.5	0.8	0.5	0.5	5.3	11.4
Female	19,780	77.7	2.8	0.4	0.5	0.5	0.3	4.2	8.7

Table 29.

Table 2.3.
Cross Tabulation of Population
with
Net Internal Migration
1975-1980

			1980					
			Village and sub-district centers		Province and district centers		Total	
			000s	percent	000s	percent	000s	percent
1975	Village and sub-district centers	000s pct.	20,786 -	- 96.7/97.1	610 -	- 3.6/2.9	21,396 -	- 55.7/100
	Province and district centers	000s pct.	693 -	- 3.2/ 4.1	16,296 -	- 96.4/95.9	16,989 -	- 44.3/100
	Total	000s pct.	21,479 -	- 100/56.0	16,907 -	- 100 /44.0	38,386 -	- 100 /100
1975-1980	Net rural-urban migration	000s pct.	- 83 - 0.2					

Notice: Percents above / add up to 100 vertically. Percents below / add up to 100 horizontally.

Source: Statistical Yearbook of Turkey, 1985, Table 35.

Table 2.4.
Cross Tabulation of Population
with
Net Internal Migration
1965-1975

			1975					
			Rural areas		Urban areas		Total	
			000s	percent	000s	percent	000s	percent
1965	Rural areas	000s pct.	16,415 -	- 98.8/80.0	4,103 -	- 32.4/20.0	20,519 -	- 70.1/100
	Urban areas	000s pct.	197 -	- 1.2/2.3	8,551 -	- 67.6/97.7	8,748 -	- 29.9/100
	Total	000s pct.	16,612 -	- 100/56.8	12,654 -	- 100/43.2	29,267 -	- 100/100
1965- 1975	Net rural-urban migration	000s pct.	3,906 13.3					

Notice: Percents above / add up to 100 vertically. Percents below / add up to 100 horizontally.

Sources: My computations based on Statistical Yearbook of Turkey, 1968 and 1985, and Timur Kuran, "Internal Migration: The Unorganized Urban Sector and Income Distribution in Turkey, 1963-1973", in Ozbudub and Ulusun, ed.s, The Political Economy of Income Distribution in Turkey, Princeton, N.J., 1980, Table 11.1 and p. 362.

3. Nominal Wage Rates

Areas of Knowledge and Ignorance

Two series of nominal average daily wages, both on an annual basis, are readily available. One series is prepared by the Social Insurance Institute, SII, and is based upon wages for insured employees. The other series is based on the annual surveys of manufacturing industry, SMI, and appears to be prepared by the SP0. The two series show very different developments since 1960, even for manufacturing industry considered separately. I shall here describe the two series in an attempt to understand their differences and possibly make a choice between them. As we shall see both series suffer from serious deficiencies. In Section 4 an attempt is made to construct better wage series.

The aggregated SII series is an average for all insured employees. Averages for a large number of activities are published but do not seem to be computed for sub-groups such as manufacturing industry. For the sake of comparison with the SMI series, I computed averages for the following sub-groups of activities: Mining & quarrying, manufacturing, and a residual

group called other industry. These averages, with those for construction, trade, transportation & communications are shown in Table 3.1 which also shows the average for all insured employees with a breakdown on public and private sectors. Published data from the State Institute of Statistics, SIS, are available, permitting computation of a separate wage series for mining & quarrying. An SIS series for mining & quarrying was accordingly computed and entered in the same table. The first two columns show the distribution of employees. The last two columns present indexes for 1984 with 1960 and 1970 = 1. For all series data exist for all years 1960-1984 with the exception of several years in the early and late 1960s and 1971 for the SMI series. Here is shown only the years 1960, 1970, 1979, 1981 and 1984. That the years 1979 and 1981 were selected rather than 1980 is related to the event of the institution of a wage arbitration board by the military government in August 1980 to settle collective agreements and issue guidelines for wage increases with certain militant unions and strikes generally banned. The 1980 wages were thus the resultant of two entirely different systems of wage formation and for the sake of analysis it was thought preferable to show the last full year under the old system and the first full year under the new one.

Comparison between the SII series for manufacturing and the SMI series discloses a disturbing disparity. The SII series increased 97.7 times from 1960 to 1984, the SMI series no less

than 153.7 times. The bottom row shows the ratio between the two series. The whole difference emerged during the 1970s. It increased further to 1981 but was almost reversed to the 1979-level by 1984. Comparison between the SII series for mining & quarrying and the SIS series for mining shows an even wider disparity. Also here the disparity grew up during the 1970s. It reached a maximum in 1979 but was later reversed somewhat. From 1960 to 1984 the SIS series for mining increased 220.9 times against 137.9 times for the SII series for mining & quarrying. These are the differences we need to explain. We begin with the series for manufacturing.

The SII series include all persons insured under the Social Insurance Law No. 506, unchanged in force since March 1, 1965. The law entitles all persons who are employed by a contract of service to benefits from social insurance with contributions from employee and/or employer. The information about wages is collected in the context of contribution payments: "The said wages have been calculated from the amount subject to insurance deductions" (Statistical Yearbook of Turkey, 1987, p.177). The following categories are not covered by the law: agricultural workers, self-employed, and persons (mainly government employees) contributing to anyone of the public pension funds established by law. Before the 1965 law, social insurance covered employees in establishments with 10 employees and more and from 1952 also in establishments with 4-9 employees in cities with more than 50,000

inhabitants. With the 1965 law the requirement of a minimum number of employees was in principle abolished but coverage should only be extended to establishments with less than 4 employees in cities and towns and with less than 8 employees in other places to the extent the necessary organizations were created. It will be understood that coverage gradually has been extended from 1965 to smaller and smaller localities and establishments.

To give an impression of the coverage we shall compare number of SII insured in manufacturing in 1963 and 1980 with number of employees enumerated by the censuses of manufacturing industry for these years since these two censuses included all establishments irrespective of size. The annual surveys cover from 1971 only public establishments and private establishments with 10 persons and more engaged (that is, including unpaid family labor, employers and partners). Table 3.2 shows number of SII insured classified as employed in manufacturing and average number of employees enumerated by the censuses of manufacturing and business, both for 1963 and 1980 and both distributed by 20 identical sub-groups.

For 1980 both total number of insured and employees and their distributions were very similar, 1,023.6 thousand insured against 1,000.6 thousand employees with no dramatic differences for individual sub-groups. Neither social insurance nor censuses may cover all establishments perfectly, in particular not small

establishments, but the coverage seems to be nearly the same. For 1963, on the other hand, the total of insured was only about 86 percent of employees enumerated by the census and differences between sub-groups were in some cases substantial; footwear, wearing apparel and textile goods with metal products, excl. machinery, accounted for almost the whole difference between the two series. The picture conforms to the gradual extension of social insurance to small establishments and communities. It seems safe to conclude that compared to the census, the coverage of social insurance improved significantly from 1960 to 1984. If wages depend upon size of establishment, we should thus expect a bias in the SII averages for daily wages.

The censuses of manufacturing in 1963 and 1980 both give breakdowns by large and small establishments, the former defined as having 10 or more persons engaged (not only employees). The information is strictly about annual average wages computed as annual wage bill over average number of employees. Table VI.App.2.3 shows these by big and small establishments (thus defined) for 1963 and 1980. Since the composition of employees by big and small establishments changed somewhat over the period, big establishments increasing relatively, wage indexes were computed. For the sake of comparison also SII wages for all insured and for manufacturing separately are shown in this table.

Table 3.3 discloses three important features of wages in manufacturing: (1) Wages are much higher in big than in small

establishments, the proportion being 3 to 1 in 1963 and 5 to 1 in 1980. (2) Wages in big establishments have thus increased from 1963 to 1980 much more than in small establishments, 46 against 26 times. (3) The average for all establishments increased even more than for big establishments, 47 against 46 times, a consequence of the shift in the distribution of employment towards big establishments. Hence the need for indexes where Laspeyres show an increase by 43.5 times, Paasche 44.4 times, and Fisher 43.9 times, a little lower than the crude average for all establishments and in between those for big and small establishments.

That wages are higher in large than in small establishments should cause no surprise. This is a well-known feature of wage structures in both DCs and LDCs. The textbook explanations (higher capital intensity, education and training, and unionization) surely apply to Turkey with the qualification that unionization was very modest, almost nonexistent... in 1963 and increased very strongly over the period. The differential is, however, by all standards very large.

That wages increased much faster in large than in small establishments may partly be the result of stronger increase in capital intensity (a consequence of the import substitution policies of the government) and improved education but may mainly be the outcome of increasing unionization and militancy concentrated in large establishments with the wage depressing

effects of rural-urban migration mainly affecting small establishments.

Let it finally be added (Table 3.1) that wages are highest in public sector establishments whether we look at SII or SMI statistics. The difference between public and private establishments has been roughly unchanged over the period and may mainly reflect the fact that public enterprises on balance are larger than private ones.

Granted these facts and the gradual extension of social insurance to small establishments and communities we should, everything else being equal, expect SII wages to be higher than MIS and census wages in 1963, all converging in 1980. This has clearly not been the case. Average daily wages in manufacturing were in 1963 about TL 19.4 according to the SMI series (interpolated) and 18.7 according to the 1963 census (assuming 300 workdays annually) while the SII average was only TL 16.6. In 1980, on the other hand, census and SMI series give us wage averages for manufacturing of TL 888 and 872, respectively, against only 457 for the SII average. Thus, contrary to expectation, SII wages were somewhat lower than SMI and census wages in 1963 and this gap increased over the period. Composition and coverage cannot explain this. We have to search for explanations not related to composition, coverage and size of establishments. Similar remarks apply to mining & quarrying.

Considering the statistical disparities for mining &

quarrying and manufacturing we would have good reasons for suspecting similar problems for the other sectors (construction, trade, transportation & communications, and other industries) had statistics other than those of SII been available. To evaluate the overall average for all insured it may still be useful to have a look at the representativeness of the SII as compared with the distribution of economically active population according to the population censuses of 1960 and 1980. Since agricultural workers, self-employed, and most government employees by law are excluded from the SII and unpaid family labor is not covered either, Table 3.4 shows the distribution of economically active, for 1980 also of employees, excluding agriculture, services (most of which is government) and persons with occupations not adequately described. These are the distributions that matter in this context, in particular the one for employees in 1980. It is immediately seen from the comparison with employees that relatively the SII in 1980 somewhat overrepresented mining & quarrying, manufacturing, construction and electricity etc., grossly underrepresenting trade, finance etc., and somewhat underrepresenting transportation & communications.¹ The misrepresentation is clearly worst for trade, finance etc. The comparison is more difficult to make for 1960 because we do not have the distribution of employees. To judge from the distribution of economically active in 1969 as compared with 1980, it would appear that the misrepresentation may have been

roughly the same in 1960 as in 1980.

An interesting feature of average wages by sub-groups according to SII (Table 3.1) is, finally, the negative correlation between relative wage in 1960 and growth rate from 1960 to 1984, low-wage groups systematically growing faster than high-wage groups, to some extent even reversing the ranking from 1960. Mining & quarrying which was lowest in 1960 topped the list in 1984. Trade which was highest in 1960 was lowest in 1984. Minimum wage legislation could have this kind of effect although it should then also show up in the comparison between small and big establishments, creating faster increase in the former. Changes in coverage may be part of the explanation; trade is an example, possibly only covering high paid employees in 1960, slowly extending to lower paid employees, hence the combination of relatively high wages in 1960, a low growth rate, and relatively low wages in 1984.

Our descriptions and comparisons of SII and SMI (census) statistics have not disclosed any particular bias in either one that might help explaining the differences between these statistics for mining & quarrying and manufacturing, in particular not the much lower rate of increase of the SII statistics. It would appear that the differences may be related to payrolls as reported by the individual establishments to the authorities.

Evasion cannot be excluded, of course. Both establishment

and employee would have an interest in underreporting for social insurance purposes.² There does not seem to be a similar incentive to underreporting for SMI and census purposes. This would explain why the SII averages are systematically lower than the SMI and census averages for the whole period but it would not explain why the discrepancy has been increasing strongly, in particular during the 1970s.

During the years of accelerating inflation and increasing marginal withholding tax rates for wages and salaries there appears to have been a tendency to substitute money wages with wages in kind or fringe benefits not liable to income taxation and social insurance contributions. This would clearly slow the increase in money wages as reported to both tax and social insurance authorities but it is not clear whether it would not have the same effect for the census and survey questionnaires.

A problem is, finally, as mentioned above, that the average wages are computed by the IIS on wages subjected to social insurance contributions and not on total wages. The point is here that Turkish social insurance (as does for instance the U.S. social security) charges contributions at a fixed percent of wages but only up to an upper limit which until 1977 remained nominally unchanged at an amount of TL 200 per day (U.S., DOHEW, SSA, Social Security Programs Throughout the World, Research Report No. 50, Washington D.C., Dec. 1977, pp.234-35). This upper limit was in 1960 more than 10 times the average SII wage. In

1977 it was about equal to the average SII wage, implying that the total of wages exempted from contribution must for this reason have increased strongly. A minimum of TL 40 per day, however, also applied, with the consequence that with inflation an increasing amount of wages must have become liable for contributions. With a fixed interval for contribution liability and the whole distribution of daily wages moving upwards with inflation, the result might be an increasing share of wages liable to contributions up to a point and after that a decreasing share. With ongoing hyperinflation and average daily wages according to SMI reaching TL 2,412.7 in 1984, the tendency for the share to decrease should tend to dominate, possibly already from the mid-1970s, allowing, of course, for later changes in the nominal limits (at this moment unknown to me). If thus reporting refer to wages paying contributions over all insured we would have an explanation of the increasing gap between reported SII wages and SMI wages_{per employee}/. Information about both the liability interval after 1977 and SII reporting practices would have to be solicited directly from the SII. Needless to say, misleading reporting might also exist for the census but there is no obvious reason why that should be the case.

Minimum wage legislation was introduced in the late 1960s under union pressure and was originally regionally differentiated at a level of 25-29 TL/day. In June 1974 it was unified at TL 40/day. Subsequent increases brought it up to TL 110 from the end

of 1977 where it remained until Sept. 1980 whence it was again differentiated between agriculture and non-agriculture at TL 160 and 180/day, respectively. The following developments are shown in Table 3.5 which for the sake of comparison also shows SII averages for the private sector.

By the mid-1970s the legal minimum for non-agricultural establishments was about half the average for insured workers in the private sector but lagged behind during the years of hyperinflation up to 1980. Since then the non-agricultural minimum wage has more than caught up with the SII average for private establishments. The gap has declined further after 1984. The discrepancy between agricultural and non-agricultural minimum wages has been some 5-20 percent, possibly indicating legislator's perceptions of the difference between agricultural and non-agricultural wages, a relatively small difference.

Table 3.6, cols 1-4, compares census and survey averages for manufacturing for 1984, the three census years 1980, 1970, and 1963 (1950 included for the sake of comparison but is not used here) and 1960. It goes without saying that the most reliable source of wages in manufacturing is the censuses of 1980, 1970 and 1963. They cover in principle all establishments and give information about average number of employees and payments of wages and salaries during the year so that annual, average remuneration per employee may be computed. The annual surveys do not cover small establishments and since 1971 they do

not give the number of employees but rather the number of persons engaged. Since 1971 we thus obtain from the surveys average paid remuneration per person engaged, a rather uninteresting average, and only for large enterprises. For 1968 and earlier the surveys report number of employees in November and average remuneration per employee obtained on that basis may be biased if seasonality is important. We have moreover the problem that the surveys from 1971 define large establishments as those with 10 and more persons engaged and lump together all public enterprises (in any case mostly large) with large private establishments thus defined, while the surveys up to and including 1968 as large classify all establishments, private and public, with 10 and more employees. The averages for 1970, presented under surveys, were in effect obtained from the 1970 census which enumerated both employees and persons engaged and was presented with breakdowns on large and small establishments on both definitions. For 1960-62, finally, large establishments are defined as having 10 or more employees and 10 and more installed hp.

Col. 4 in Table 3.6 shows the SMI averages reported to the World Bank by the SPO (the averages reported to the OECD appear to be somewhat different). These are allegedly based on the surveys and present averages per person engaged for the years 1960 onwards with some gaps in the 1960s and for 1971. How this is possible for the years before 1970 is not clear. Col.5 shows the SII averages for insured persons.

Both censuses and surveys lead to averages of annual remunerations. To obtain average daily remuneration, I assumed 300 workdays per year. How annual remuneration has been converted into daily remuneration by the SMI and SII series is unknown to me.

Comparing census and survey averages we find the former systematically lower than the latter. This is to be expected, recalling that small establishments have lower wages per employee than larger ones and that the survey averages are calculated on a larger number of persons than the census averages. That the SMI averages are lower than the census averages is perplexing and indicates that adjustments must have been made. The SII averages are systematically lower than all other averages, possibly a consequence of underreporting from the side of the establishments.

The lower panel of Table 3.6 permits easy comparison of growth rates of nominal wages. Census and survey averages show

almost identical growth rates over the periods 1963-70 and 1960-70 and for 1960-70 the same is the case for surveys, SMI and SII. Thus, for the 1960s it does not matter much which wage growth indicator we use. For 1970-80, censuses, surveys, and SMI give very similar growth rates. It is for this period that the insurance data, SII, show much lower growth. The SII shows much lower growth also for 1960-80 than the SMI. For the years 1980-84, survey and SII agree closely with the SMI showing somewhat lower increase.

In Col.s 6 and 7, finally, averages are shown for the aggregated sector manufacturing and mining, computed simply by adding payments of wages and salaries for the two sectors and dividing by the sum of employees, Col.6, and by the sum of persons engaged in manufacturing and employees in mining, Col.7. Both averages and growth rates are roughly the same for all years and periods.

The SPO, finally, has made estimates of nominal wages, averages for private sector, public sector and for Turkey. It is not clear from the OECD source whether government is included in public sector and Turkey. The SPO averages are in-between the SII and SMI averages and must be based upon these latter averages. The rates of increase for 1980-84 are somewhat higher for the SPO estimates than for both SII and SMI averages. Notice that the rate of increase is higher for the SII averages than for the SMI averages for 1980-84. For 1980-84 (86) we finally have a series

from Turkish Employers' Association. It shows approximately the same increase as the SMI series. This tends to reverse the development 1960-80 when SMI averages increased at almost double the rate of the SII averages. Both the wage arbitration board and the upper limits for social security contributions and the adjustment to inflation may here have played a role, speeding up the SII rate of increase. The SPO estimates are shown in Table 3.7 with SMI and SII and the Turkish Employers' Association series for the sake of comparison.

Conclusions: My conclusions can only be that the SII data should not be used in serious wage studies covering the years 1960-1985. The same is the case for the SPO estimates. The census and survey data for manufacturing with the SIS data for mining should be used for establishing annually chained indexes (Laspeyres, Paasche, Fisher, Tornqvist, etc. and possibly others with superlative index qualities) for nominal wages in manufacturing and mining with weights by sub-industry, ownership, and, possibly size. Simple averages may not be reliable. To establish such indexes would be a major research effort. It would still leave us without wage indicators for trade, transportation, construction, agriculture, and personal services - and that is how it is!

Notes to Section 3:

1. Absolutely, in mining & quarrying almost nine-tenths are

insured, in manufacturing and construction about two-thirds, but in trade, transportation, etc. only about one-third. In electricity etc. there must be a classification problem.

2. Suggested also by the OECD, Economic Surveys, Turkey, June 1987, p. 17.

Tables to Section 3:

Table 3.1.
Nominal Wages, Turkey, 1960-1984

	Workers		TL/day					1984	1984
	1960	1984	1960	1970	1979	1981	1984	1960 = 1	1970 = 1
<u>Social Insurance Data, SII:</u>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
All insured workers	100	100	14.5	35.3	294.3	543.8	1,302.4 ^a	89.8	26.9
Public	n.a.	n.a.	n.a.	38.7	348.8	627.0	1,476.1	n.a.	38.1
Private	n.a.	n.a.	n.a.	33.0	260.9	501.8	1,157.4	n.a.	25.1
Public/Private				1.17	1.33	1.25	1.27		
<hr/>									
Mining & quarrying ^b	11.5	5.0	10.9	30.7	332.4	605.0	1,502.9	137.9	49.0
Manufacturing	52.3	47.2	13.9	35.8	303.1	567.6	1,357.5	97.7	37.9
Construction	18.8	19.0	15.4	33.7	270.4	501.8	1,189.3	77.2	35.3
Trade	1.8	6.4	21.8	36.7	252.0	465.8	1,094.6	50.2	29.8 ^d
Transport & communic.	5.7	4.8	21.8	40.4	311.4	556.2	1,309.3	60.0	32.4
Other	9.9	17.6	16.6	36.1	301.0	545.8	1,287.3	77.6	25.7
<u>SIS Data, Mining^c</u>			15.4	41.7	1,038.1	1,606.5	3,402.4	220.9	81.6
<u>Manufacturing Industry</u>									
<u>Survey, SMI:</u>									
All industries	100	100	15.7	40.7	483.8	1,274.1	2,412.7	153.7	59.3
Public	n.a.	35.8	n.a.	47.4	562.4	1,649.5	2,837.6	n.a.	59.9
Private	n.a.	64.2	n.a.	36.9	437.4	1,061.1	2,257.7	n.a.	61.2
Public/Private			n.a.	1.28	1.29	1.56	1.26		
<u>Mining, SIS/SII</u>			1.41	1.36	3.12	2.66	2.26		
<u>Manufacturing, SMI/SII</u>			1.13	1.14	1.60	2.24	1.77		

^a Provisional

^b Not including crude oil and natural gas

^c Excluding petroleum companies, salt mines, and establishments under Stone Quarries Regulations.

Source: Statistical Yearbook of Turkey, several issues. Information in World Bank.

Table 3.2.

Turkey: Manufacturing Industry,Insured and Employees

(thousands)

Industry	SSI, insured		Census, employees	
	1980	1963	1980	1963
Food	159.7	76.3	149.3	69.7
Beverages	13.4	4.8	12.3	6.1
Tobacco	59.2	30.5	52.8	24.7
Textiles	163.2	95.5	181.3	109.0
Footwear, apparel, text.goods	54.2	5.0	42.7	32.0
Wood and cork	25.4	5.5	28.8	16.1
Furniture and fixtures	13.0	2.6	19.2	5.3
Paper and paper products	14.8	8.0	19.5	8.2
Printing, publishing etc.	19.3	7.1	16.6	8.2
Leather and products	6.3	2.2	6.0	4.3
Rubber products	12.1	17.0	16.2	6.2
Chemicals and chemical products	45.9	13.9	46.2	15.6
Petroleum and coal products	7.4	1.6	10.2	2.0
Non-metallic products	72.1	21.7	83.8	25.0
Basic metal	59.7	10.8	75.6	12.4
Metal products, excl. machinery	75.9	17.4	62.4	40.4
Machinery, excl. electrical	74.4	12.6	67.4	6.9
Electrical machinery, appliances, etc.	24.5	4.1	37.2	6.8
Transportation equipment	95.8	30.5	70.6	26.1
Other	27.2	2.6	6.5	5.6
Total manufacturing	1,023.6	369.7	1,004.6	430.7
of which: Large establishments	n.a.	n.a.	787.0	299.0
Small "	n.a.	n.a.	217.6	131.7

Sources: Statistical Yearbook of Turkey, several issues.

Table 3.2.

Employees and Wages in ManufacturingTurkey, 1963 and 1980

	MI censuses				
	Employees ^a		Annual wages, averages, TL		1980, 1963 = 1
	1963	1980	1963	1980	
Big, \geq 10 persons	69.4	78.3	6,942	321,588	46.3
Small	30.6	21.7	2,592	67,428	26.0
Total	100	100	5,611	266,529	47.5
Weighted averages:					
Laspeyres			5,611	243,815	43.5
Paasche			5,998	266,529	44.4
Fisher			5,801	254,919	43.9
			Daily wages, averages, TL		
SMI			19.4 ^b	872	44.9
Censuses, total			18.7	888	47.5
SII, all insured			17.9	427	23.9
" , manufacturing			16.6	457	27.5

Sources: Statistical Yearbook of Turkey, several issues.^a percent^b interpolated.

Table 3.4.

Turkey: Distribution of Labor *Population Census and SII1960 and 1980

(percents)

	1960		1980			
	Census Economically active ^a	SII	Census		SII	Insured as % of employ.
			Economic. active ^b	Employees		
Total, thousands	1,918.8	574.6	4,816.0	3,238.6	1,947.2	60.1
Mining and quarrying	4.0	12.2	2.7	4.0	5.8	87.3
Manufacturing	46.1	56.6	41.0	46.3	52.6	68.2
Construction	15.1	20.3	15.9	21.9	24.6	67.7
Electricity etc.	0.8	2.8	0.7	1.0	4.7	274.0
Trade, finance etc.	21.0	2.0	28.6	18.3	7.3	35.7
Transport and commun.	12.9	6.1	11.0	8.5	5.1	35.8
Total	100	100	100	100	100	-

Source: Statistical Yearbook of Turkey, several issues.^a Age 15 and above ^b Age 12 and above

* Excluding agriculture, forestry, hunting and fishing; community, social, and personal services; activities not adequately defined; altogether 85.2 percent of economically active in 1960, 74.1 percent in 1980.

Table 3.5.
Turkey: Minimum Wages
(nominal TL/day)

Year	Month	Legal minimum, decreed		Legal minimum		
		Agri- culture	Non- agri- culture	OECD*	Annual average, non-agric.	SII, average, private
Before 1974		25	29		29	
1974	June		40		34	63.5
1975					40	78.8
1976	June		60		50	105.9
1977	Jan. ^a		75		75	128.7
1978	Jan. ^a		110		110	185.6
1979					110	260.9
1980	Sept.	160	180	108	133	367.4
1981	April	287	300	235	270	501.8
1982				237	300	634.6
1983	Jan. ^a	440	544	356	544	859.8
1984	March	?	818	594	750	1,157.4
1985	Sept.	?	1,380	1,108	958	
1986				1,112	1,380	

* Without further specification. ^aDecreed Dec. previous year but effective Jan.

Sources: Legal minimum, decreed - OECD, Economic Surveys, Turkey, several issues, Calendar of Economic Events.

Legal minimum, OECD, ibid., June 1987, Table 5.

" " , Annual average, non-agric. - my computation.

SII, average, private - World Bank, internal information.

Table 3.6.

Turkey: Nominal Wages, Simple Averages
(TL/day and Indexes)

Year	Manufacturing					Manufacturing and Mining	
	Census all establ., per employee	Surveys			SII, per insured	Censuses, all establ., per employee	Manufacturing surveys with mining census
		All public with ≥ 10 persons engaged, per person eng.	All establishments ≥ 10 employees, per employee	SMI, per person engaged			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1984	-	3,251.4	-	2,412.7	1,357.5	-	3,267.3
1980	888.4	1,060.3	-	872.7	457.4	899.7	1,055.6
1970	44.1	48.3	47.8	40.7	35.8	43.8	47.4
1963	18.7	-	20.0	-	17.2	18.9	20.2
1960	-	-	19.0 ^a	15.7	13.9	-	18.8
1950	4.3	-	-	-	-	-	-
Indexes, base year = 1							
1980 - 84	-	3.07	-	2.76	2.97	-	3.10
1960-80	-	-	-	55.59	32.91	-	56.15
1970-80	20.15	21.95	-	21.44	12.78	20.54	22.27
1963-70	2.36	-	2.39	-	2.08	2.32	2.35
1960-70	-	-	2.52	2.59	2.58	-	2.52

^a ≥ 10 employees and ≥ 10 hp.

Sources: Col.s 1, 2, 3 - Statistical Yearbook of Turkey, several issues.

Col. 4 - World Bank from SPO. Including bonuses but excluding social security and pension funds payments.

Col. 5 - My computations based on Statistical Yearbook of Turkey, several issues.

Col. 6 - Statistical Yearbook of Turkey, several issues.

Col. 7 - My computations based upon the data behind col.s 2, 3, and 6.

Table 3.7:
Turkey: Nominal Wages
(TL/day)

	SPO—estimates				SII			SMI			Turkish Employers Associ- ation
	Average			Senior civil servant							
	Private	Public	Turkey		Private	Public	Total	Private	Public	Total	
1986	3,414	4,406	3,601	10,640							5,632
1985	2,655	3,392	2,856	7,283							4,171
1984	1,598	2,370	1,799	4,222	1,157	1,476	1,202	2,253	2,838	2,413	3,135
1983	1,101	1,614	1,224	2,384	860	1,125	944	1,622	2,412	1,941	2,307
1982	759	1,203	871	1,916	635	807	723	1,431	2,010	1,617	1,864
1981	698	937	794	1,201	502	627	544	1,061	1,650	1,274	1,420
1980	451	580	497	817	367	525	427	751	1,086	873	958
1960							14.5			15.7	
1986, 1980 = 1	7.6	7.6	7.2	13.0							
1984, 1980 = 1	3.5	4.1	3.6	5.2	3.2	2.8	3.1	3.0	2.6	2.8	3.3
1980, 1960 = 1							29.4			55.6	

Sources: SPO—estimates, Annual Programmes as reported by OECD, Economic Surveys, Turkey, June 1987, Table 5.
SII and SMI, World Bank, internal information.
Turkish Employers' Association, communicated by the OECD.

4. Phillips Relations for Turkey

For estimating a Phillips relation we need sufficiently long, unbroken time series of adequate coverage and reasonable quality for nominal wage rates, unemployment rates or other labor market indicators, and some price variable as a minimum.

i) Nominal wage rates. From Section 3 it should be clear that the SII series for insured employees should not be used for this purpose. The SPO series cannot be used either; it covers only the years 1980-86 and its quality is unknown. The SMI series is also ruled out; it misses no less than 8 years between 1960 and 1984 and average wage per person engaged is not really what we need here. This leaves us with no choice but to start out directly from censuses and surveys and establish a series for average wage rate per employee. At this moment I have to leave aside the important problem of computing wage indexes rather than simple averages.

Considering the nature of censuses and surveys for manufacturing I decided to anchor the series in the census averages for employees for 1963, 1970 and 1980 and then to use the annual survey averages for persons engaged for interpolating years between 1963 and 1970 and between 1970 and 1980,

respectively, and extrapolating years before 1963 and after 1980. Simple proportional inter- and extrapolations were applied. The result - a far cry of course from the ideal indexes - is shown in Table 4.1, col.1. A corresponding exercise for the aggregate of manufacturing and mining produced the series presented in col.2. The two series are very similar, partly because mining is a much smaller sector than manufacturing, partly because nominal wage developments, contrary to the impression conveyed by the SII data, have been quite similar in the two sectors. I propose to use the latter series in attempts to establish a Phillips relation. It is the broadest, well documented series outside government we can come up with for the whole period 1960-85. It would be a mistake, on the other hand, to take it for granted that this series is representative of a general, non-government sector wage rate.

ii) Labor market indicators. Several such indicators are available. They were discussed in Section 1. The SPO estimates are clearly biased. The urban labor force surveys, however useful for judging other labor market indicators, are available for only seven years from 1967 to 1985 and do not cover the critical period 1970 to 1981. The series for registered unemployed is based on very small numbers until around 1975 and may for later years reflect government programs and their administration and use more than unemployment. We have further a choice between our two auxiliary placement office series and a general activity

series such as, for instance, the annual deviations of non-agricultural GDP from a trend (agriculture excluded to avoid the impact of crop fluctuations with little importance for the labor market in general). All series are shown in Table 4.1. The choice is not an easy one. One of the purposes of estimating a Phillips relation for Turkey is exactly to try out the various labor market indicators in the context of wage analysis.

Unionization, collective agreements, and, in the case of conflict, strikes were legalized in 1963, were somewhat constrained during the period of martial law 1970-73, and severely curtailed in 1980 with some relaxation after 1983. This institutional change may have had significant importance for money wage formation and has to be considered. Available quantitative indicators are number of unions, number of conflicts, and number of days lost in strikes; we shall use the latter indicator (col.3).

Rural-urban migration may be another factor that profoundly influences wage formation in manufacturing and mining. To consider this complex phenomenon in the context of a Phillips relation would take us beyond standard Phillips curve theory.

iii). Price indicators. Col. 4 presents the consumer price index for Istanbul which may be as good as any other CPI for Turkey for the period under consideration. Phillips theory is not well-established at this point. Implicit GDP deflators have been used frequently and an argument could be made for using product

prices in manufacturing and mining. What we are after is actually price expectations.

iv) Phillips relations hypothesized. Numerous variations of the expectations-augmented Phillips relation have been suggested and estimated.¹ We shall here operate on the basis of two recent specifications estimated by Johnson & Layard and Robert J. Gordon, respectively.

Letting w denote nominal wage rate, p a price indicator, U the rate of unemployment and t time, Johnson & Layard (1986, p.982) propose to let the expected change in price be proxied by a weighted average of lagged prices and wages, which leads to the hypothesis:

$$\Delta w = \beta + \alpha \Delta p_{-1} + (1 - \alpha) \Delta w_{-1} - \gamma \log U + \delta t,$$

which again leads to the estimated equation

$$\dot{w} - \dot{w}_{-1} = \alpha (\dot{p} - \dot{w})_{-1} - \gamma \log U + \delta t + \beta, \quad 0 < \alpha < 1.$$

Notice that the specification implies a Phillips relation in which the acceleration rather than the time rate of change of wage rates is determined by the rate of unemployment. The lag structure assumes away possible simultaneity problems.

Gordon's (1988, p.278) specification also differs from the original Phillips relation in that it operates with the rate of change of unit labor costs rather than the wage rate change as dependent variable. Rates of change of unit labor costs and labor's income share, both lagged, as well as an excess demand for labor indicator and certain exogenous variables are used as

independent variables. Letting θ denote the average product of labor, X the excess demand indicator, z exogenous variables and L a lag operator, the estimated equation is

$$(\dot{w} - \dot{\theta}) = \alpha(L) \times (\dot{w} - \dot{\theta})_{-1} - \beta(L) \times (\dot{w} - \dot{\theta} - \dot{p})_{-1} + \gamma(L) \times X + \delta(L) \times z$$

Also here the lag structure assumes away simultaneity problems. The theoretical expectation for $\sum \alpha = 1$ and if $\sum \beta$ is not significantly different from 0 the important implication is that the rate of change of wage costs is independent of the rate of change of price, throwing out the standard mark-up hypothesis. For the United States Gordon found $\sum \alpha$ close to 1 and $\sum \beta$ close to 0.

v) Results: In the runs of both Johnson & Layard and Gordon equations we tried out to the extent possible all our labor market excess demand indicators, the purpose of the exercise partly being to get an impression of the quality of these indicators. The deviation from the GDP trend could not be used with the Johnson & Layard specification because it takes the log of the labor market indicator which here for some years is negative. Moreover, we did not include minimum wages as an exogenous variable; this could only be done at the cost of all observations before 1970. The results are shown in Tables VI.4.2 to 3. They are not encouraging.

For the Johnson & Layard specification we find correct size and signs of both price-wage variables and labor market

indicator. For the price-wage variable, t-statistics exceed 2 when used with the SPO estimate of unemployment and registered unemployed and when used with the application/placement ratio and the (application - placements)/applications rate at least higher than 1. For the labor market indicator, however, t-values are systematically below 1 except for the applications/placements ratio for which it is about $1\frac{1}{2}$. DWs are generally satisfactory but the $\text{adj.}R^2$ s are very low, 0.05 to 0.14, and F-values indicate insignificance of all specifications.

For the Gordon specification a simple one-lag with a three-lag version were run. Results are presented in Table

4.2. For the three-lag version only the sum of coefficients are shown. Even for the one-lag version, $\text{adj.}R^2$ s are in all cases around 0.5 and F-values indicate significance at the 5 percent level. DWs are generally not very satisfactory. Cochrane-Orcutt transformations in many cases lead to sign changes and low t and $\text{adj.}R^2$ values. In the three-lag version, $\text{adj.}R^2$ s are never below 0.76 and in two cases even of the order 0.95. F-values show significance at the 1 percent level.

Considering the individual independent variables, we find in the one-lag version correct sign for the lagged labor cost variable in all cases and the value is in some cases close to one. t-values are in nine cases out of ten above 2 and in five cases even above 3. The share variable has systematically negative sign, meaning that prices have a positive effect on the

rate of change of labor costs. The t-value for this variable exceeds 2 only in two cases but is never below 1. The labor market indicators simply do not work. Only in one case (the applications/placements ratio) is the sign correct and when the strike-variable is added the sign is always wrong. t-values are generally low, in no case above 2 and in six cases below 1. The strike variable always has correct sign. It has in one case a t above 2 and in two other cases it is close to 2.

In the three-lag version individual independent variables fare less well. The labor cost variable has in two cases wrong sign and the sum of coefficients is at most equal to 0.7. Expectations appear to have been far from "rational". The share-variable has systematically negative sign and is in some cases quite high, indicating a strong direct effect of prices on labor costs. The labor market indicator has wrong sign except for the SPO estimate of the unemployment rate and the placement office flow unemployment rate; both however get positive sign after Cochrane-Orcutt transformation. The strike variable, finally, has always correct sign in the sense that strikes lead to higher increase in labor costs.

vi) Conclusions: The conclusions to be drawn from these attempts to establish a Phillips relation for Turkey appear to me to be:

Either the data are just not good enough. Considering our discussion in Sections 1 and 3 this should cause no great surprise.

Or, for the period studied, 1962-85, market forces have played a sub-ordinated role in wage determination in manufacturing and mining. Considering the important role of government and public enterprises in manufacturing and mining, unionization with increasing militancy until 1980, the attempt to introduce incomes policy under the Eçevit government in 1978-79 followed by the public wage controls and labor market repression by the military government from 1980, and the introduction since 1969 of minimum wages, this also might cause no surprise.

Painfully aware of the low quality of Turkish labor market statistics, I feel nonetheless inclined to adopt the second interpretation. We would then for the period in question have a labor market with approximate market clearing for uneducated, unskilled labor in rural areas and high unemployment in urban areas and for educated labor generally, explained by government and union interference and interaction. Faced with the objection that real wages fell strongly in manufacturing and mining after 1978 and that unemployment does not seem to responded much, the answer is that such response, through structural change, should be expected to take considerable time and that, in fact, some labor market indicators, placement office data, do indicate a decline in excess supply of labor since 1982.

Notes to Section 4:

1. An estimated Phillips relation published by the OECD, Economic

Surveys, Turkey, June 1987, Annex I, suffer from serious data problems, relying upon half-year data obtained exclusively through interpolation on annual data. It can hardly be taken seriously.

Tables to Section 4:

Table 4.1

Turkey: Nominal Wage and Labor Market Series

Year	Av. nominal wage, TL* Manufac- turing, inter-and extrapol.	Manufac. and mining, inter- and extrapol.	Number of days lost in strikes, 000s	CPI Istan- bul	Applications /Placements (Applications placements)	Registered unemployed pct of civ. labor force	SPO- estimate of unem- ployment, percent	Devia- tion from trend, pct.	Average legal minimum wage, non- agric. TL*	Manufac. GDP per unit of labor, at 1968 f.c., TL 000
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1985	2,807.2	2,820.2	194	12,821	3.25	69.2	5.47	12.7	-10.3	1,483
1984	2,724.2	2,784.8	2	9,524	3.84	74.0	4.51	12.4	-8.7	958
1983	2,082.4	2,126.7	illegal	6,549	4.11	75.7	3.35	12.4	-8.8	750
1982	1,587.8	1,631.2	illegal	5,082	4.22	76.4	2.63	11.8	-7.4	544
1981	1,276.5	1,305.9	illegal	3,831	3.82	73.9	1.67	11.2	-5.0	300
1980	888.4	899.7	5,408.6	2,784	3.09	67.7	1.62	10.7	-3.2	270
1979	537.8	584.2	2,217.3	1,422	3.08	67.6	1.09	9.4	6.1	133
1978	312.3	328.5	1,598.9	876	2.80	64.3	...	8.1	12.4	110
1977	205.4	216.7	5,778.2	541	2.20	54.5	0.92	7.6	15.4	110
1976	138.2	145.5	1,768.2	420	2.21	54.7	0.95	7.7	15.2	75
1975	114.6	115.9	1,102.7	366	1.78	43.8	0.79	7.1	12.4	50
1974	86.6	87.2	470.1	302	1.62	38.5	0.57	6.4	10.9	40
1973	63.7	64.2	479.9	244	1.47	32.0	0.31	6.6	9.3	34
1972	58.1	58.5	147.6	214	1.51	33.7	0.31	6.0	6.4	29
1971	54.5	53.6	296.0	185	1.58	36.7	0.32	5.7	3.8	29
1970	44.1	43.8	260.3	156	1.68	40.4	0.32	5.3	3.4	29
1969	n.a. ^b	n.a. ^c	357.8	144	1.62	38.3	0.21	5.2	3.4	29
1968	32.3	36.2	192.2	138	1.57	36.4	0.25	4.9	2.6	0
1967	20.5	20.3	202.8	120	1.62	38.7	0.19	4.6	-0.9	0
1966	27.1	27.2	409.8	114	1.66	39.7	0.19	4.1	0.0	0
1965	24.0	23.4	240.6	105	1.66	39.6	0.17	3.6	-5.1	0
1964	24.7	24.3	n.a.	102	n.a.	n.a.	0.19	3.2	-4.9	0
1963	18.7	18.9	n.a.	100	n.a.	n.a.	0.17	2.8	-5.0	0
1962	20.0	19.8	n.a.	93	n.a.	n.a.	0.15	2.2	-8.0	0
1961	18.4	18.0	n.a.	90	n.a.	n.a.	n.a.	n.a.	-7.4	0
1960	17.8	17.6	n.a.	87	n.a.	n.a.	n.a.	n.a.	-7.1	0

Sources: Col. 1 and 2 - my computations, see text.

Col. 3, 4, 5 - Statistical Yearbook of Turkey, several issues.Col. 6 - OECD, Main Economic Indicators.Col. 7 - World Bank, internal information and OECD, Economic Surveys, Turkey, several issues.

* daily Col. 8 - Deviation from trend of non-agricultural GDP at constant 1960 factor cost as percent of trend value. Exponential OLS trend.

b Interpolation from SIS-data: 41.1

c " " " : 41.3

Col. 9 - My computation. Based on information in OECD, Economic Surveys, Turkey, Calendar of Main Economic Events, several issues.

Col. 10 - Turkey, Table VII.14, Col. 1.

Table 4.2.

Estimate of Phillips RelationSpecification: Johnson & Layard - OLS

Wage rate	Labor market indicator, L	Estimated coefficients with (t-statistics)				Statistics				Number of observations
		Constant	$(\dot{p}-\dot{w})_{-1}$	Log L	t	adj.R ²	F	D.W.	S.E.	
Manufacturing	SPO est. of U	38.59 (0.96)	0.64 (2.30)	-32.07 (-0.80)	1.87 (0.67)	0.12	2.01	2.14	16.70	24
"	Appl./Placem.	9.41 (1.10)	0.45 (1.59)	-32.63 (-1.63)	1.65 (1.29)	0.12	1.92	1.98	15.63	21
"	(Appl.-Pl.)/Appl.	71.57 (0.83)	0.43 (1.41)	-20.10 (-0.79)	0.75 (0.56)	0.02	1.88	1.89	16.50	21
"	Registr. unempl.	1.57 (0.05)	0.64 (2.28)	-2.12 (-0.16)	-0.02 (-0.01)	0.09	1.75	2.14	16.95	24
Manuf. & mining	SPO est. of U	42.76 (1.14)	0.57 (2.37)	-36.13 (-0.97)	2.14 (0.82)	0.14	2.27	2.03	15.57	24
"	Appl./Placem.	9.89 (1.21)	0.47 (1.91)	-29.19 (-1.52)	1.36 (1.13)	0.13	2.02	1.87	14.98	21
"	(Appl.-Pl.)/Appl.	64.34 (0.79)	0.44 (1.69)	-17.68 (-0.74)	0.56 (0.45)	0.05	1.32	1.77	15.72	21
"	Registr. unempl.	4.29 (0.14)	0.58 (2.35)	-1.09 (-0.09)	-0.20 (-0.10)	0.10	1.87	2.03	15.92	24

Specification see G.E.Johnson and P.R.G.Layard, "The Natural Rate of Unemployment: Explanation and Policy" in Handbook of Labor Economics, Vol. II, ed.s O.Ashenfelter and R.Layard, pp. 921-999, Amsterdam 1986.

Table 4.3.

Estimate of Phillips RelationSpecification Robert J. Gordon - OLS

One-lag specification											
Wage rate	Labor market indicator, L	Estimated coefficients with (t-statistics)				Statistics				Number of observations	
		Constant	$(\dot{w}-\theta)_{-1}$	$(\dot{w}-\theta-\dot{p})_{-1}$	L	Z	adj.R ²	F	D.W.		S.E
Manuf. & mining	SPO est. of U	2.84 (0.25)	0.66 (2.63)	-0.33 (-1.04)	0.67 (0.34)		0.45	6.08	1.35	16.17	20
	"	-0.38 (-0.03)	0.70 (2.99)	-0.46 (-1.49)	0.50 (0.27)	0.0050 (1.85)	0.52	6.11	1.58	15.07	20
	Appl./Placem.	6.04 (1.08)	0.79 (3.03)	-0.45 (-1.29)	-0.62 (-0.35)		0.45	9.08	1.46	16.17	20
	"	2.18 (0.39)	0.70 (2.82)	-0.45 (-1.38)	0.05 (0.27)	0.0053 (1.85)	0.52	6.11	1.55	15.07	20
	(Appl.-Pl.)/Appl.	-5.22 (-0.50)	0.88 (4.28)	-0.61 (-1.87)	0.27 (1.29)		0.49	7.16	1.72	15.45	20
	"	-1.14 (-0.11)	0.80 (3.83)	-0.56 (-1.73)	0.09 (0.37)	0.0044 (1.37)	0.52	6.15	1.67	15.04	20
	Reg. unemployed	9.03 (1.71)	0.41 (1.61)	-0.58 (-2.33)	0.01 (1.06)		0.48	7.40	1.09	16.22	22
	"	2.68 (0.50)	0.50 (2.02)	-0.37 (-1.32)	0.01 (1.26)	0.0059 (2.22)	0.56	7.11	1.47	14.36	20
	Dev. from GDP-trend	3.46 (0.63)	0.63 (4.13)	-0.73 (-4.42)	1.03 (1.88)		0.54	9.09	1.56	15.28	22
	"	0.13 (0.02)	0.75 (4.71)	-0.49 (-1.84)	0.64 (0.80)	0.0032 (0.91)	0.54	6.48	1.69	14.79	20
Three-lag specification											
	SPO est. of U	6.50	0.70	-0.71	-0.52	0.0151	0.79	6.36	2.39	9.46	18
	Appl./Placem.	9.44	-0.15	-1.00	0.20	0.0038	0.78	6.04	1.95	9.96	18
	(Appl.-Pl.)/Appl.	6.62	0.31	0.61	-0.17	0.0271	0.82	7.34	2.30	8.84	18
	Registered unemployed	-4.02	0.28	-1.11	0.01	0.0451	0.76	5.55	1.83	10.08	18
	Dev. from GDP-trend	17.62	-0.03	-1.86	1.64	0.0011	0.94	21.98	3.18	5.20	18

Specification see Robert J. Gordon, "The Role of Wages in the Inflation Process", A&A, May 1988, p.276-7.

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